

WHAT IS CLAIMED IS:

1. A beverage bottling plant for filling bottles with a liquid beverage filling material, said beverage bottling plant comprising:

- a cleaning station configured and disposed to clean bottles;
- a first conveyer arrangement configured and disposed to convey bottles to said cleaning station;
- an inspection station configured and disposed to inspect cleaned bottles;
- said inspection station comprising at least a first inspection structure and a second inspection structure separate from said first inspection structure;
- a second conveyer arrangement configured and disposed to convey cleaned bottles from said cleaning station to said inspection station;
- said second conveyer arrangement comprising at least a first set of conveyer band structures and a second set of conveyer band structures;
- at least a portion of said first set of conveyer band structures comprising at least one straight conveyer band; which at least one straight conveyer band has at least one straight portion;
- at least a portion of said second set of conveyer band structures comprising at least one straight conveyer band; which at least one straight conveyer band has at least one straight portion;
- at least a portion of said first set of conveyer band structures and at least a portion of said second set of conveyer band structures being disposed at an angle with respect to one another;
- said angle and said at least first and second set of conveyer band structures together being configured and disposed with respect

to one another to separate a first stream of cleaned bottles into at least two streams of cleaned bottles to permit conveying of a second stream of cleaned bottles, narrower than a first stream of cleaned bottles, to said first inspection structure and also to permit conveying of a second stream of cleaned bottles, narrower than a first stream of cleaned bottles, to said second inspection structure;

a guide structure disposed adjacent said first and second sets of conveyer band structures and configured to guide a second stream of cleaned bottles to a first inspection structure and a third stream of cleaned bottles to a second inspection structure;

a filling machine configured to fill cleaned and inspected bottles with liquid beverage filling material;

said beverage filling machine comprising a plurality of beverage filling positions, each beverage filling position comprising a beverage filling device for filling bottles with liquid beverage filling material;

said filling devices comprising apparatus configured to introduce a predetermined flow of liquid beverage filling material into the interior of bottles to a substantially predetermined level of liquid beverage filling material;

said apparatus configured to introduce a predetermined flow of liquid beverage filling material comprising apparatus configured to terminate the filling of beverage bottles upon liquid beverage filling material reaching said substantially predetermined level in bottles;

a third conveyer arrangement configured and disposed to move inspected bottles from said inspection machine to said filling machine;

a closing station configured to close filled bottles; and

a fourth conveyer arrangement configured and disposed to

transfer filled bottles from said filling machine to said closing station.

2. The beverage bottling plant for filling bottles with a liquid beverage filling material according to claim 1, wherein:

said second conveyer arrangement comprises one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) a belt conveyer structure; and
- (ii) a chain conveyer structure.

3. The beverage bottling plant for filling bottles with a liquid beverage filling material according to claim 1, comprising at least one of (a), (b), (c), (d), (e), (f), and (g), wherein (a), (b), (c), (d), (e), (f), and (g) comprise:

(a) an input configured to receive an input stream of bottles;
a first output being configured to discharge a first output stream of bottles;

a second output being configured to discharge a second output stream of bottles;

said first set of conveyer band structures comprises a first portion disposed adjacent said input configured to receive an input stream of bottles and a second portion disposed adjacent said first output being configured to discharge a first output stream of bottles;

said second set of conveyer band structures comprises a first portion disposed adjacent said input configured to receive an input stream of bottles and a second portion disposed adjacent said second output being configured to discharge a second output stream of bottles;

said second portion of said first set of conveyer band structures and said second portion of said second set of conveyer band structures being disposed to diverge from one another at a point of divergence;

said guide structure is disposed between said point of divergence and said first and second outputs to permit separation of the first stream of bottles into the first output stream of bottles and into the second output stream of bottles;

(b) said guide structure comprises a tip portion;

said second portion of said first set of conveyer band structures and said second portion of said second set of conveyer band structures are disposed at an angle with respect to one another to separate the first output stream of bottles from the second output stream of bottles; and

said second portion of said first set of conveyer band structures and said second portion of said second set of conveyer band conveyer structures diverge from one another anteriorly of said tip portion of said guide structure;

(c) at least one sheet metal slide structure;

said at least one sheet metal slide structure is disposed adjacent said point of divergence to permit separation of the first output stream of bottles and the second output stream of bottles; and

said at least one sheet metal slide structure is configured to cover at least a portion between said first set of conveyer band structures and said second set of conveyer band structures;

(d) a turn station configured and disposed to effectuate at least one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) turning of a conveyer band of a band conveyer; and
- (ii) turning of the direction of movement of containers on a band conveyer;

(e) a first output;

a third set of conveyer band structures and a fourth set of conveyer band structures together being configured and disposed to receive bottles from said first output and to separate bottles from said first output into a third output stream of bottles and a fourth output stream of bottles;

(f) said first set of conveyer band structures and said second set of conveyer band structures comprise one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) a belt conveyer structure; and
- (ii) a chain conveyer structure;

and

(g) said second portion of said first set of conveyer band structures and said second portion of said second set of conveyer band structures are disposed at an angle with respect to one another to separate the first output stream of bottles from the second output stream of bottles;

said angle comprising approximately 1.5 degrees.

4. A container filling plant conveyer arrangement configured

to transport containers, such as bottles and cans, said conveyer arrangement comprising:

- an input being configured and disposed to receive an input stream of containers being a plurality of containers wide;

- a first output being configured and disposed to discharge a first output stream of containers narrower than the input stream of containers;

- a second output being configured and disposed to discharge a second output stream of containers narrower than the input stream of containers;

- a first conveyer belt structure and a second conveyer belt structure;

- said first conveyer belt structure being configured and disposed to receive a portion of the input stream of containers from said input and being configured and disposed to discharge the first output stream of containers, narrower than the input stream of containers, to said first output;

- said second belt conveyer structure being configured and disposed to receive a portion of the input stream of containers from said input and being configured and disposed to discharge the second output stream of containers, narrower than the input stream of containers, to said second output;

- said first conveyer belt structure and said second conveyer belt structure together being configured and disposed in a physical relation with respect to one another to separate the input stream of containers into the first output stream of containers and into the second output stream of containers; and

- a guide structure being configured and disposed to guide the

first output stream of containers to said first output and the second output stream of containers to said second output.

5. The container filling plant conveyer arrangement according to claim 4, wherein:

said first conveyer belt structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said first output being configured to discharge a first output stream of containers;

said second conveyer belt structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said second output being configured to discharge a second output stream of containers;

said first portion of said first conveyer belt structure and said first portion of said second conveyer belt structure being disposed straight and parallel with respect to one another at a first distance;

said second portion of said first conveyer belt structure and said second portion of said second conveyer belt structure being disposed with respect to one another at a second distance;

said second distance is greater than said first distance;

said first conveyer belt structure comprises a first, intermediate, point, disposed between said input and said first output, being the point at which said second portion of said first conveyer belt structure diverges from said first portion of said first conveyer belt structure;

said second conveyer belt structure comprises a first, intermediate, point, disposed between said input and said second

output, being the point at which said second portion of said second conveyer belt structure diverges from said first portion of said second conveyer belt structure;

said guide structure is disposed between:

said first, intermediate, point of said first conveyer belt structure and said first output; and

said first, intermediate, point of said second conveyer belt structure and said second output to permit separation of the first stream of containers into the first output stream of containers and into the second output stream of containers.

6. The container filling plant conveyer arrangement according to claim 5, wherein:

said guide structure comprises a tip portion;

said second portion of said first conveyer belt structure and said second portion of said second conveyer belt structure are disposed at an angle with respect to one another to separate the first output stream of containers from the second output stream of containers; and

said second portion of said first conveyer belt structure and said second portion of said second conveyer belt structure diverge from one another anteriorly of said tip portion of said guide structure.

7. The container filling plant conveyer arrangement according to claim 6, comprising:

at least one sheet metal slide structure;

said at least one sheet metal slide structure is disposed

adjacent said first, intermediate, point of said first conveyer belt structure and said first, intermediate, point of said second conveyer belt structure to permit separation of the first output stream of containers and the second output stream of containers; and

said at least one sheet metal slide structure is configured to cover at least a portion between said first conveyer belt structure and said second conveyer belt structure.

8. The container filling plant conveyer arrangement according to claim 7, comprising:

a turn station being configured and disposed to effectuate at least one of (i) and (ii), wherein (i) and (ii) comprise:

(i) turning of a conveyer band of a band conveyer; and

(ii) turning of the direction of movement of containers on a band conveyer.

9. The container filling plant conveyer arrangement according to claim 8, comprising:

a third conveyer belt structure and a fourth conveyer belt structure together being configured and disposed to receive containers from said first output and to separate containers from said first output into a third output stream of containers and a fourth output stream of containers.

10. The container filling plant conveyer arrangement according to claim 9, wherein:

said first conveyer belt structure and said second conveyer belt structure comprise one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) a band conveyer structure; and
- (ii) a chain conveyer structure.

11. The container filling plant conveyer arrangement according to claim 4, comprising at least one of (a), (b), (c), (d), (e), (f), and (g), wherein (a), (b), (c), (d), (e), (f), and (g) comprise:

(a) said first conveyor structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said first output being configured to discharge a first output stream of containers;

said second conveyer structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said second output being configured to discharge a second output stream of containers;

said second portion of said first conveyer structure and said second portion of said second conveyer structure being disposed to diverge from one another at a point of divergence;

said guide structure is disposed between said point of divergence and said first and second outputs to permit separation of the first stream of containers into the first output stream of containers and into the second output stream of containers;

(b) said guide structure comprises a tip portion;

said second portion of said first conveyer structure and said second portion of said second conveyer structure are disposed at an angle with respect to one another to separate the first output stream

of containers from the second output stream of containers; and

said second portion of said first conveyer structure and said second portion of said second conveyer structure diverge from one another anteriorly of said tip portion of said guide structure;

(c) said second portion of said first conveyer structure and said second portion of said second conveyer structure being disposed to diverge from one another at a point of divergence;

at least one sheet metal slide structure;

said at least one sheet metal slide structure is disposed adjacent said point of divergence to permit separation of the first output stream of containers and the second output stream of containers; and

said at least one sheet metal slide structure is configured to cover at least a portion between said first conveyer structure and said second conveyer structure;

(d) said first conveyer structure comprises a first band conveyer; and

said second conveyer structure comprises a second band conveyer;

and the container filling plant conveyer arrangement further comprising:

a turn station configured and disposed to effectuate at least one of (i) and (ii), wherein (i) and (ii) comprise:

(i) turning of a conveyer band of a band conveyer; and

(ii) turning of the direction of movement of containers on a band conveyer;

(e) a third conveyer structure and a fourth conveyer structure together being configured and disposed to receive containers from said first output and to separate containers from said first output into a third output stream of containers and a fourth output stream of containers;

(f) said first conveyer structure and said second conveyer structure comprise one of (i) and (ii), wherein (i) and (ii) comprise:

(i) a belt conveyer structure; and

(ii) a chain conveyer structure;

and

(g) said second portion of said first conveyer structure and said second portion of said second conveyer structure are disposed at an angle with respect to one another to separate the first output stream of containers from the second output stream of containers;

said angle comprises approximately 1.5 degrees.

12. A container filling plant conveyer arrangement configured to transport containers, such as bottles and cans, said conveyer arrangement comprising:

an input being configured and disposed to receive an input stream of containers;

a first output being configured and disposed to discharge a first output stream of containers;

a second output being configured and disposed to discharge a second output stream of containers;

a first conveyer structure and a second conveyer structure;

said first conveyer structure being configured and disposed to receive a portion of the input stream of containers from said input and being configured and disposed to discharge the first output stream of containers to said first output;

said second conveyer structure being configured and disposed to receive a portion of the input stream of containers from said input and being configured and disposed to discharge the second output stream of containers to said second output;

said first conveyer structure and said second conveyer structure together being configured and disposed in a physical relation with respect to one another to separate the input stream of containers into the first output stream of containers and into the second output stream of containers; and

a guide structure being configured and disposed to guide the first output stream of containers to said first output and the second output stream of containers to said second output.

13. The container filling plant conveyer arrangement according to claim 12, wherein:

said first conveyor structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said first output being configured to discharge a first output stream of containers;

said second conveyer structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said second output being configured to discharge a second output stream of containers;

said second portion of said first conveyer structure and said second portion of said second conveyer structure being disposed to diverge from one another at a point of divergence;

said guide structure is disposed between said point of divergence and said first and second outputs to permit separation of the first stream of containers into the first output stream of containers and into the second output stream of containers.

14. The container filling plant conveyer arrangement according to claim 13, wherein:

said guide structure comprises a tip portion;

said second portion of said first conveyer structure and said second portion of said second conveyer structure are disposed at an angle with respect to one another to separate the first output stream of containers from the second output stream of containers; and

said second portion of said first conveyer structure and said second portion of said second conveyer structure diverge from one another anteriorly of said tip portion of said guide structure.

15. The container filling plant conveyer arrangement according to claim 14, comprising:

at least one sheet metal slide structure;

said at least one sheet metal slide structure is disposed adjacent said point of divergence to permit separation of the first output stream of containers and the second output stream of containers; and

said at least one sheet metal slide structure is configured to cover at least a portion between said first conveyer structure and

said second conveyer structure.

16. The container filling plant conveyer arrangement according to claim 15, wherein:

said first conveyer structure comprises a first band conveyer;
and

said second conveyer structure comprises a second band conveyer;

and the container filling plant conveyer arrangement further comprising:

a turn station configured and disposed to effectuate at least one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) turning of a conveyer band of a band conveyer; and
- (ii) turning of the direction of movement of containers on a band conveyer.

17. The container filling plant conveyer arrangement according to claim 16, comprising:

a third conveyer structure and a fourth conveyer structure together being configured and disposed to receive containers from said first output and to separate containers from said first output into a third output stream of containers and a fourth output stream of containers.

18. The container filling plant conveyer arrangement according to claim 17, wherein:

said first conveyer structure and said second conveyer structure comprise one of (i) and (ii), wherein (i) and (ii) comprise:

- (i) a belt conveyer structure; and
- (ii) a chain conveyer structure.

19. The container filling plant conveyer arrangement according to claim 18, wherein:

said angle comprises approximately 1.5 degrees.

20. The container filling plant conveyer arrangement according to claim 12, comprising at least one of (a), (b), (c), (d), (e), (f), and (g), wherein (a), (b), (c), (d), (e), (f), and (g) comprise:

(a) said first conveyer structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said first output being configured to discharge a first output stream of containers;

said second conveyer structure comprises a first portion disposed adjacent said input configured to receive an input stream of containers and a second portion disposed adjacent said second output being configured to discharge a second output stream of containers;

said second portion of said first conveyer structure and said second portion of said second conveyer structure being disposed to diverge from one another at a point of divergence;

said guide structure is disposed between said point of divergence and said first and second outputs to permit separation of the first stream of containers into the first output stream of containers and into the second output stream of containers;

(b) said guide structure comprises a tip portion;

said second portion of said first conveyer structure and said second portion of said second conveyer structure are disposed at an angle with respect to one another to separate the first output stream of containers from the second output stream of containers; and

said second portion of said first conveyer structure and said second portion of said second conveyer structure diverge from one another anteriorly of said tip portion of said guide structure;

(c) at least one sheet metal slide structure;

said at least one sheet metal slide structure is disposed adjacent said point of divergence to permit separation of the first output stream of containers and the second output stream of containers; and

said at least one sheet metal slide structure is configured to cover at least a portion between said first conveyer structure and said second conveyer structure;

(d) said first conveyer structure comprises a first band conveyer; and

said second conveyer structure comprises a second band conveyer;

and the container filling plant conveyer arrangement further comprising:

a turn station configured and disposed to effectuate at least one of (i) and (ii), wherein (i) and (ii) comprise:

(i) turning of a conveyer band of a band conveyer; and

(ii) turning of the direction of movement of containers on a band conveyer;

(e) a third conveyer structure and a fourth conveyer structure together being configured and disposed to receive containers from said first output and to separate containers from said first output into a third output stream of containers and a fourth output stream of containers;

(f) said first conveyer structure and said second conveyer structure comprise one of (i) and (ii), wherein (i) and (ii) comprise:

(i) a belt conveyer structure; and

(ii) a chain conveyer structure;

and

(g) said second portion of said first conveyer structure and said second portion of said second conveyer structure are disposed at an angle with respect to one another to separate the first output stream of containers from the second output stream of containers;

said angle comprises approximately 1.5 degrees.